1952

CALHOUN AND BATCHTOWN REFUGES
NARRATIVE REPORT
JANUARY, FEBRUARY, MARCH, APRIL, 1952

I. GENERAL

A. Weather Conditions:

This was a warmer spring than in 1951, with maximum temperatures higher in all four months than for the corresponding period a year ago. Minimum temperatures in January and February were slightly higher than in 1951, while March and April minimums were a little lower. During most of the period the weather was damp, with chilly winds and very little sunshine until the middle of April.

JAN - APR 1952

Relative readings are shown below (table is for April 15 only):

Month	Year	Maximum	Minimum	Precipitation
January	1951	69	4 below	.97
	1952	73	4 above	.95
February	1951	64	9 above	6.44
	1952	67	24 above	.82
March	1951	76	17 above	4.32
	1952	72	13 above	2.09
April (1-15)	1951	65	33 above	1.63
	1952	80	31 above	2.06
			1951 Total	13.36
			1952 Total	5.92

From April 15-20 an additional 1.38" of rain fell, bringing the total for the period to 7.30".

B. Water Conditions:

The river stages in January and March were higher this period than last year, while February and April were lower. All indications are that there will be higher water during late April and May this year than last.

Fluctuation in pool levels due to dam manipulation was not bad in Pool 26, although in January and February there was a drawdown in this pool. A comparison of pool levels in Pool 26, compared to the same period in 1951, is shown in the following table:

Month	High	Low	Difference	Year
January	15.6	14.4	1.2	1951
	16.8	15.3	1.5	1952
February	17.2	14.5	2.7	1951
	15.1	14.8	.3	1952
March	16.5	14.6	1.9	1951
	18.5	14.9	3.6	1952
April (1-15)	18.8	16.4	2.4	1951
	17.1	15.6	1.5	1952

Maximum monthly variation in 1952 was 3.6, compared with 2.7 in 1951.

Since April 15, when the original data were summarized, the Mississippi started to rise, and on April 28 the stage was 24.1 feet. By May 1 it was expected to reach 26.0 feet.

II. WILDLIFE

A. Migratory Birds:

1. Populations and Behavior:

(a) Waterfowl:

The duck population was low during the first part of January, but started to build up about January 20. From this date on birds moved in in increasing numbers.

There were two different peaks this spring. The first was noted on February 21, followed by an even bigger peak on March 6. Throughout February and March there was a general movement of ducks into and through the area. Many of the birds moving through did not stop on the refuge areas.

Ducks started building up earlier this year than last and did not remain on the sanctuaries in numbers for very long periods of time.

Total duck numbers in this area showed an increase this spring, with an estimated total use of Calhoun Refuge of 507,000, compared to 381,550 in 1951, and 333,125 in 1950.

The Batchtown Refuge showed unusually high use this spring, with a peak of 462,400, compared to only 5,300 in 1951. In 1951, however, the pool was low during most of the period and hence was not too attractive to ducks.

Mallards and pintails represented the bulk of birds using the refuge areas, with Calhoun having total use of 225,000 mallards and 200,000 pintails, and Batchtown having 235,000 mallards and 200,000 pintails.

No evidences of lead poisoning were noted this period.

By the end of the period most waterfowl had left the area, with the exception of 300 coot, 200 scaup, and several hundred wood ducks. Normally, only a few coot and wood ducks spend the summer here, and it is expected that the scaup will move out soon.

(b) Geese:

Canada geese started to stay on the refuge on January 14, increasing to a peak concentration of 800. This was slightly less than the 1,000 peak on March 27, 1951. Geese did not stay on the refuge long before moving on. This spring it is estimated that 3,200 Canada geese used the refuge, compared to 12,000 in 1951.

Blue and snow geese also showed up on January 14, reaching a peak of 10,000 on March 17. In 1951 the peak was 15,000 on March 24. Large flocks would move in this spring, stay a few days, and move out, to be replaced by new birds moving in. In the Batchtown Refuge this spring total use was 3,000 blue and snow geese, while none used the area in the spring of 1951.

(c) Swans:

No swans were observed on either area this spring.

(d) Egrets:

Two egrets were observed on April 9. None had been seen up to the end of this period a year ago.

(e) Shorebirds and Other Water Birds:

Wilson snipe have not shown up in any numbers, due no doubt to the cold weather. By the end of the period a year ago 10 had been seen.

Blue herons are present in fair numbers in all areas, with an estimated 150 being present compared to 50 last year. On private land on the Missouri side of the Mississippi River 100 blue heron nests were observed.

2. Food and Cover:

Food conditions in the closed areas were not too good this period because of prolonged high water during the growing season last spring. Comparative shortage of food in the closed areas did not have any effect on waterfowl use, however, as ducks fed for the most part in machine-picked cornfields from Grafton to Hannibal, Missouri. High water during the latter part of the season made marginal areas in both refuges excellent feeding sites for ducks this spring.

B. Upland Game Birds:

No upland game birds are present on either the Batchtown or Calhoun Refuges.

There is ample food and cover present on both areas to sustain fairly high populations of these birds in event any should become established in the areas. The high water in the spring discourages upland game from using the bottomlands.

C. Big Game Animals:

No big game animals are present on either areas.

D. Fur Bearers:
(a) Muskrat:

The muskrat population is looking a little better this spring. A few more signs have been observed than last year, but the high water this spring will probably cut down on the number of young produced. Very little trapping was done last fall.

High water has forced muskrats to the margins. No dead rats have been observed to date.

(b) Mink:

Trappers did not take many mink from the bottomlands during the last season. Trappers and commercial fishermen report mink are low this year and not many signs are observed.

(c) Skunk:

No skunk sign has been noted on either area this spring.

(d) Beaver:

Beaver are increasing in this area as a lot of sign can be found on almost all islands on the Mississippi and Illinois

Rivers. Eight beaver were reported taken during the Illinois open season last fall. Trappers report lots of beaver where they trapped, but that they could not hold them in their traps.

(e) Otter:

No otter signs have been seen on either area.

(f) Raccoon:

This species is increasing in the Illinois River bottoms, and from all the signs observed on the Mississippi River area also. Several have been observed during the day time by commercial fishermen.

(g) Foxes:

Foxes are on the increase in the entire portion of the Illinois and Mississippi Rivers. The counties have lifted the bounty on this species and trappers expect that they will increase more.

E. Predaceous Birds:

Eagles remain static from last fall, when 27 were observed, compared with 28 this spring. Last spring during the same period 80 were observed.

Hawks are common in all areas. Red-tailed hawks are in the majority and appear to be holding about the same as last year.

A goodly number of owls have been observed in the timber areas. These birds seem to be holding their own.

F. Fish:

Fish are plentiful in all lakes in the area. The Illinois and Mississippi Rivers seem to have plenty of rough fish as most commercial fishermen report good results. Commercial fishermen report that their nets are full of game fish when they fish in the lake areas. The pole and line fishing is slow this spring as the weather has been too cold.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development:

Nothing to report under this as posting will be done during the next period.

B. Plantings:

4. Cultivated Crops:

Ten share-cropping permits were issued during this period, but it is too early to plant as yet.

VI. PUBLIC RELATIONS

A. Recreational Use:

Pecan picking was popular through January and February. Boating started in March and is increasing every day as the weather gets better. Some camping was observed the first part of April.

B. Refuge Visitors:

None during this period.

C. Refuge Participation:

There is nothing to report under this heading.

D. Hunting:

There is nothing to report as there was no hunting season during this period.

E. Fishing:

Pole and line fishing was fair during part of March. Some good catches of crappie and bass were taken, but the cold weather has stopped this sport. All indications are that the pole and line fishermen will have a good season.

Commercial fishing was poor during the first part of the period, but fishermen report better results the last part of the period, and they expect it will be as good as last year.

F. **Violations:**

No cases were made during this period. Very few reports of violations were received during the period. Those that did violate stopped before being caught.

Superintendent of Refuges

May 1, 1952

APPROVED

/s/ D. H. Janzen

Regional Director
May 2, 1952

WATERFOWL

Refuge Calhoun Months [illegible] January to April, 19 [illegible]

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose	300	1/14	600	2/15	200	3/17			3,200
Cackling goose									
Brant									
White-fronted goose									2,000
Snow goose	500	1/14	4,000	3/17	50	3/17			12,000
Blue goose	200	1/14	6,000	3/17	50	3/17			
III. Ducks:									
Mallard	200	1/14	100,000	3/6	50	4/9			225,000
Black duck	50	1/15	5,000	3/6	50	3/31			6,000
Gadwall	100	3/6	500	3/29	25	3/31			1,000
Baldpate	50	2/27	10,000	3/6	150	4/6			17,000
Pintail	150	1/17	150,000	3/6	150	3/15			200,000
Green-winged teal	10	3/31	200	3/9	50	4/9			250
Blue-winged teal	100	3/31	500	4/9	500	4/9			1,200
Cinnamon teal									
Shoveller									
Wood duck	50	2/20	500	3/6	100	4/9			500
Redhead	100	4/4	200	4/4	100	4/4			100
Ring-necked duck	10	1/14	2,000	3/29	50	4/9			2,000
Canvas-back	[illegible]	1/14	2,000	3/6	2,000	3/6			3,000
Scaup	[illegible]	1/16	6,000	3/29	2,000	4/9			15,000
Golden-eye	500	1/14	1,000	2/5	10	3/31			1,500
Buffle-head									
Ruddy duck									
IV. Coot:	100	3/18	3,000	3/29	500	4/11			10,000

(over)

Form NR-1

3-1750
(Sept.1950) Interior - Duplicating Section, Washington, D.C. 82449

SUMMARIES

Dates waterfowl counts made _____

Percent of waterfowl area covered _____

Dates brood counts made _____

Percent of area covered in brood counts _____

Total production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 807,000

Peak waterfowl numbers 201,000

Areas used by concentrations Stump, Swan, Gilbert, Lesher, Cedar Swamp, Illinois River, Dresser Island

Principal nesting areas this season _____

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.

(2) First seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak concentration: The greatest number of the species present in a limited interval of time.

(4) Last seen: The last refuge record for the species during the season concerned in the reporting period.

(5) Young produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Patuxent Months of January to April, 19 52

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose									
Cackling goose									
Brant									
White-fronted goose									
Snow goose	1,000	3/6	1,000	3/6	1,000	3/6			1,000
Blue goose	2,000	3/6	2,000	3/6	2,000	3/6			2,000
III. Ducks:									
Mallard	300	1/17	125,000	3/6	500	3/20			225,000
Black duck	10	1/17	200	3/6	10	3/20			200
Gadwall									
Baldpate	100	2/17	10,000	3/6	10,000	3/6			10,000
Pintail	150	1/17	150,000	3/6	50	3/20			200,000
Green-winged teal									
Blue-winged teal									
Cinnamon teal									
Shoveller									
Wood duck	100	2/20	200	3/6	20	3/20			200
Redhead									
Ring-necked duck	100	3/6	200	3/14	200	3/20			400
Canvas-back	2,000	3/6	2,000	3/6	2,000	3/6			2,000
Scaup	200	1/17	5,000	3/14	100	3/20			7,000
Golden-eye									
Buffle-head									
Ruddy duck									
IV. Coot:	200	3/19	1,000	3/29	200	4/11			4,000

SUMMARIES

Dates waterfowl counts made _____

Percent of waterfowl area covered _____

Dates brood counts made _____

Percent of area covered in brood counts _____

Total production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 482,000

Peak waterfowl numbers 286,000

Areas used by concentrations From Dam 25 to upper end of Gilead closed area.

Principal nesting areas this season _____

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.

(2) First seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak concentration: The greatest number of the species present in a limited interval of time.

(4) Last seen: The last refuge record for the species during the season concerned in the reporting period.

(5) Young produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1751
Form NR-1a
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Calhoun and Batchtown Months of January to April, 19 51

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Blue heron	3	3/1	100	3/29	10	4/9				180
Egrets	2	4/9	2	4/9	2	4/9				2
Grebe	40	3/8	40	3/8	5	4/9				100
II. Shorebirds, Gulls and Terns:										
Gulls	2,000	1/14	20,000	2/16	50	4/9				30,000
Terns	500	1/14	5,000	2/16	20	4/9				5,000

(over)

(1)	(2)	(3)		(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Large number of crows here all during the period.				

Reported by.....Edward A. Davis.....

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1752
Form [illegible]-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Calhoun and Patchtown Months of January to April, 19[illegible]

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.

Nothing to report under this.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

Form NR-4
(June 45)

SMALL MAMMALS

Refuge Calhoun and Batchtown Year ending April 30, 1952

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5) Total Population
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
Nothing to report under this.														

* List removals by Predator Animal Hunter

REMARKS:

Reported by _____

INSTRUCT S

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

116007

1952

CALHOUN AND BATCHTOWN REFUGES
NARRATIVE REPORT
MAY, JUNE, JULY, AUGUST, 1952

I. GENERAL

A. **Weather Conditions:**

This was a warmer summer than in 1951, with maximum temperatures higher in all four months than for the corresponding period a year ago. Minimum temperatures in June and July were slightly higher than in 1951. During most of the period the weather was very hot and humid.

Relative readings are shown below:

Month	Year	Maximum	Minimum	Precipitation
May	1951	90	43	2.46
	1952	91	43	2.03
June	1951	93	51	7.84
	1952	104	60	2.04
July	1951	96	57	4.83
	1952	102	61	4.11
August	1951	92	57	.64
	1952	95	53	
			1951 Total	15.77
			1952 Total	

MAY - AUG 1952

B. **Water Conditions:**

The river stages in Pool 26 during the month of May were higher than last year, but during the months of June and July the stages were lower, improving food and cover conditions. Fluctuation in pool levels due to dam manipulation was not bad in Pool 26. There was no drawdown in this pool during the period. A comparison of pool levels in Pool 26, compared to the same period in 1951, is shown in the following table:

Month	Year	High	Low	Difference
May	1951	22.9	15.5	7.4
	1952	24.6	14.9	9.7
June	1951	18.2	14.8	3.7
	1952	16.2	14.8	1.4
July	1951	27.5	17.3	10.2
	1952	16.0	14.8	.7
August	1951	15.3	14.1	1.4
	1952	15.8	14.9	2.6

In Pool 25 there was a drawdown throughout the period.

II. WILDLIFE

A. Migratory Birds:

1. Populations and Behavior:

(a) Waterfowl:

During the first part of May a few scaup and coot were observed in the area, but by the middle of the month almost all ducks had gone north except wood ducks and a few mallards that nested in the area.

The wood duck broods showed a big increase this year, with a count of 103 broods, compared with 36 broods last year.

Eight broods of mallards were observed this year, compared with two broods last year.

One brood of scaup was observed this year, compared with none last year.

A comparison of 1951 and 1952 is shown in the following table:

Species	Broods	Young	Year
Wood duck	36	289	1951
	103	828	1952
Mallards	2	16	1951
	8	64	1952
Scaup	1	8	1952
Totals	39	304	1951
	112	900	1952

By the first of August some blue-wing teal were arriving in the area. A few flocks of mallards were present, and wood ducks were common in almost all areas.

By the end of the period blue-wings were showing up in goodly numbers, while mallards were increasing. Wood ducks showed an increase over last year in most areas.

(b) Geese:

By the first of May all geese had left the area. None have been observed during the period.

(c) Swans:

No swans were observed during the period.

(d) Egrets:

Egrets started to come into this area about the first part of May and continued to increase during the period. Estimated peak concentration was 2,500 birds, compared with 2,000 last year. It is estimated 4,000 birds used the area during the period.

(e) Shorebirds:

Killdeer, plover, and yellow-legs are common in most of the areas and are about the same as last year. A few Wilson snipe were observed. There is no increase in this species in this area.

(f) Other Water Birds:

Blue heron showed an increase this year, with an estimated 200 birds using the area, compared with last year, when 158 birds were observed.

2. Food and Cover:

Food and cover is excellent in Pool 26. Swan Lake and most all the water areas are nearly solid with sago. American pondweed made a good showing in Stump Lake. Cutgrass made good growth in all the margin areas. Sagittaria is spotty along the marginal areas, but is good. Smartweed is good in the Glades and marginal areas of Stump and Swan Lakes. Corn is available in all the lowlands this year, and ducks are due for good feeding this fall.

The Batchtown area does not look as good as Pool 25 was down during the growing season. Only the high marginal areas have smartweed on them. There is little aquatic growth. The cornfields adjacent to the area are very good in all of the lowlands and will provide sufficient feed for the majority of dabblers.

B. Upland Game Birds:

None were observed on refuge lands. There is very little habitat for upland game birds.

C. Big Game Animals:

Two deer were observed in the Gilbert Lake area during the period.

D. Fur Animals:

(a) Muskrats:

Muskrat signs are more plentiful this period than last year, but the habitat is limited in this area for this species as the fluctuation of the pools is too much for them. They do show an increase compared with last year.

(b) Mink:

Mink show some increase over last year as water conditions have been better this period. More signs have been observed in the bottomlands than last year.

(c) Skunk:

No signs of skunk have been observed during this period. Habitat is limited for this species.

(d) Beaver:

Beaver signs are observed on most islands along the Mississippi and Illinois Rivers. This species is holding about the same as last period.

(e) Otter:

None observed.

(f) Raccoon:

Raccoon signs are more plentiful throughout the bottomlands. This species is on the increase in all the timbered areas.

(g) Foxes:

Foxes are on the increase throughout the area according to signs observed and information reported by farmers living close to the areas.

E. Predaceous Birds:

Red-tailed hawks are observed in almost all the areas along the river and appear to have increased.

Turkey vultures are numerous along the Illinois River. An estimated 50 birds used the area, compared with 39 last year.

F. Fish:

Both game fish and rough fish are plentiful. Fishing has been better this period as the water conditions were improved over last year. Larger numbers of fishermen used the area than last year.

Commercial fishermen report good results during the period, and the price has held up, putting more pressure on rough fish.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development:

All boundary lines have been reconditioned on the 6,400 acres of closed areas. Signs were replaced where needed, and boundary lines cut out. The entire line of the closed areas will be gone over before the season opens to catch any brush that might grow up to cover the signs. The area demanded lots of hard work to put in shape this time as many of the steel posts had worked down into the Illinois River mud.

The 21-foot boat was painted during the period and put in the water.

B. Planting:

4. Cultivated Crops:

The nine share-crop permittees got their crops in, and the prospect of raising a crop looks good. We do not expect any high water this time of the year to overflow fields.

VI. PUBLIC RELATIONS

A. Recreational Use:

A larger number of people used the area during the period for swimming, camping, and boating as the summer was warmer than last year, and more people came out from the cities to get away from the heat. Boat liveries reported more business than last year as the water conditions were better. Pleasure boating on the Illinois and Mississippi Rivers was heavier than last year.

B. Refuge Visitors:

Dr. W. E. Green worked in the area during the period.

C. Refuge Participation:

Attended refuge conference meeting at Winona, Minnesota, on August 6 and 7.

E. Fishing:

Sport:

Sport fishing has been good nearly all of the time during this period. Many more fishermen used the area due to better water conditions on the Illinois River. Good catches of bass, blue gill, and crappie were reported throughout the season.

Commercial:

Commercial fishing has been better than last year throughout the period as water conditions were more stable. The catfish run was good in July. Buffalo and carp came in well during May and June. The good fisherman is satisfied with the results. The price and demand were good.

VII. OTHER ITEMS

The Refuge Manager assisted Dr. Green in an examination of all War Department agricultural lands in Pools 22, 25, and 26 for the purpose of checking current status of these lands in connection with negotiations with the Corps of Engineers.

Superintendent of Refuges

September 4, 1952

Acting Regional Director
SEP 8 1952

WATERFOWL

Refuge Calhoun and Batchtown Months May to August, 19 52

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose									
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. Ducks:									
Mallard	8	6/16	80	7/25	40	7/22	8	64	78
Black duck									
Gadwall									
Baldpate									
Pintail									
Green-winged teal									
Blue-winged teal									
Cinnamon teal									
Shoveller	8	5/10	1064	7/25	16	7/25	103	828	1104
Wood duck									
Redhead									
Ring-necked duck									
Canvas-back	8	6/26	10	6/26	8	6/26	1	8	10
Scaup									
Golden-eye									
Buffle-head									
Ruddy duck									
IV. Coot:									

(over)

Form NR-1

3-1750
(Sept.1950) Interior - Duplicating Section, Washington, D.C. 82449

SUMMARIES

Dates waterfowl counts made _____

Percent of waterfowl area covered _____

Dates brood counts made _____

Percent of area covered in brood counts _____

Total production:

Geese _____

Ducks 900

Coots _____

Total waterfowl usage during period 1169

Peak waterfowl numbers 1124

Areas used by concentrations Calhoun and Batchtown Refuges

_____

Principal nesting areas this season _____

_____

Reported by Edward A. Davis

INSTRUCTIONS

(1) **Species:** In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.

(2) **First seen:** The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) **Peak concentration:** The greatest number of the species present in a limited interval of time.

(4) **Last seen:** The last refuge record for the species during the season concerned in the reporting period.

(5) **Young produced:** Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(6) **Total:** Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1751
Form NR-1
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Calhoun and Batchtown Months of May to August, 1952

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Egrets	2	5/4	2500	7/21	1000	8/15				4000
Herons	10	5/8	160	7/24	160	8/15				200
II. Shorebirds, Gulls and Terns:										
Gulls	3000	5/4	3000	5/4	25	8/15				5000
Terns	1500	5/4	1500	5/4	10	8/15				2500

(over)

(1)	(2)	(3)		(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Large numbers of crows here during period.				

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1752
Form NR-2
(Apr[illegible] 1946)

UPLAND GAME BIRDS

1613

Refuge Calhoun and Batchtown Months of May to August, 19[illegible]

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
	Nothing to report under this.									

INSTRUCTIO

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

1952

CALHOUN AND BATCHTOWN REFUGES
NARRATIVE REPORT
SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER, 1952

I. GENERAL

A. Weather Conditions:

The maximum temperatures in September and December were lower than those recorded for the previous year, while temperatures in October and November showed higher maximum readings.

Extremely dry weather conditions prevailed throughout September, October, and the first part of November. In this area there were over 73 consecutive days without appreciable precipitation and the area became tinder dry. Fire hazard was high, and while no fires occurred on the refuge areas, adjoining areas, including portions of Pere Marquette State Park, suffered fire damage. So severe was the drought and so high was the fire hazard that the State of Illinois seriously considered closing all hunting seasons as a fire prevention measure. Plans were announced to close the State on November 10, but on November 8 fairly good rains fell over a considerable portion of the State, and plans for closing the hunting seasons were abandoned. In Missouri, however, drought conditions prompted the State to close all hunting seasons for a period of 9½ days, with the ban being lifted following the general rains of November 8.

SEP - DEC 1952

Because of the dry weather, ducks did not move around as much as usual, and many hunters complained about poor duck shooting as a result.

Relative readings are shown below:

Month	Year	Maximum	Minimum	Precipitation
September	1951	97	39	3.67
	1952	94	41	.97
October	1951	85	35	2.07
	1952	94	24	.34
November	1951	75	13	2.27
	1952	78	17	2.12
December	1951	73	27	.20
	1952	61	20	.59
			1951 TOTAL	8.21
			1952 TOTAL	4.12

B. Water Conditions:

The river stage in Pool 26 was bad throughout the period, with low levels prevailing all of the time. This resulted in bad hunting conditions in the pool, especially in areas which are difficult to get in during low water. Generally, conditions in Pool 26 were not favorable during this period.

A comparison of pool levels in Pool 26, compared to the same period in 1951, is shown in the following table:

Month	Year	High	Low	Difference
September	1951	15.8	15.0	.8
	1952	15.4	14.7	.4
October	1951	15.8	15.0	.8
	1952	15.1	14.8	.3
November	1951	16.1	15.1	1.0
	1952	15.4	14.7	.7
December	1951	15.8	15.0	.8
	1952	15.1	14.5	.6

Maximum monthly variation in 1952 was .7, compared with 1.0 in 1951.

Extremely favorable water conditions prevailed in Pool 25 throughout the season. This contributed to excellent growth of marginal species, such as smartweed, millet, and cutgrass, where the beds were inundated by a few inches of water after the seeds developed, and made the area especially attractive for ducks. This was especially noted in the Gilead Slough area, where slightly flooded marginal species were so dense it was almost impossible to flush ducks from them.

Patrol activities were facilitated by good water conditions this year for boat travel throughout the area was possible. Last year extremely low water not only made the area unattractive for waterfowl, but also made travel impossible. At the stage of 5.3 ft. in 1951, vast mud flats resulted, and the only water was that found in the main channels and sloughs.

Good water conditions this year produced a good crop of satisfied hunters, who had little to complain about, and which led to a good harvest of birds.

C. Fires:

No fires occurred on refuge areas, although adjoining lands suffered some burns. Several hundred acres in Pere

Marquette State Park were burned off, and the fire hazard elsewhere was critical until the rain of November 8.

II. WILDLIFE

A. Migratory Birds:

1. Populations and Behavior:

a. Waterfowl:

Ducks started coming into the area in early September and increased during the period. Blue-winged teal arrived on September 2 this year, compared to September 29 last year. Pintails were first observed on September 2 also, while in 1951 they were first seen on September 29. Mallards came in on September 2, compared to September 29 last year.

On the Batchtown area, mallards peaked at 100,000, maintaining this peak from October 12-25. Pintails peaked there at 75,000 during the week of October 12-18. Blacks peaked at 1,000 on October 20; baldpates at 7,000 during the week of October 12-18; green-winged teal peaked at 300 on November 1; blue-wings peaked at 15,000 the first week of October; wood ducks peaked at 4,000 on October 12-18; canvas-backs peaked at 2,000 during the week of November 25-29; and coot peaked at 10,000 during the week of October 19-25.

The peak concentration on the Batchtown area occurred during the week of October 12-18, with an estimated 192,000 birds in the area. At the end of the period there were 5,450 ducks remaining in the refuge.

On the Calhoun Refuge mallards were present on September 2, building up to a peak of 450,000 during the week of December 14-20, and dropping rapidly to 10,000 the following week. Blacks peaked at 8,000 the same week and dropped to 200 the following week. The gadwall peak of 2,000 occurred the first week in December, while baldpate peaked at 4,000 during the week of December 14-20. Green-winged teal peaked at 1,500 the last week of October, with blue-wings peaking at 3,000 throughout most of September. The pintail peak occurred during the last week of October, with 10,000 birds present; while the 3,000 shovellers present the week of December 14-20 was the peak for that species. Wood ducks peaked with 2,000 present the first week of October. Scaup peaked the week of December 14-20 with only 5,000 birds present.

Waterfowl increased slowly on the Calhoun Refuge to about 45,000 birds the last of October and held those numbers until the

end of November, when the numbers suddenly increased to 171,000 birds. The peak concentration of 478,000 birds occurred the following week of November 30-December 6.

The peak concentration on the Batchtown Refuge last year was found before the season opened. Then the peak occurred on October 23, with 49,000 ducks present. This year the peak of 192,000 also occurred just prior to the opening of the season.

On the Calhoun Refuge the peak last year was 321,000 birds on November 22, compared to the later peak this year of 478,000 the first week of December.

During the first week in November, when the State of Missouri was closed to hunting because of the fire hazard, hunting dropped off in the Batchtown area. It was found that ducks were moving across the river into Missouri, where they were not molested. When shooting was resumed in Missouri hunting improved on the Illinois side of the river.

Gun pressure in this area was high during the past season. A total of 2,449 bag checks were obtained from open portions of Pool 25, and 3,372 bag checks were obtained from Pool 26, for a total of 5,821 for the area. These included data from open public shooting grounds, State-managed public shooting grounds, and a few private clubs, to give a good over-all picture of what the harvest in that area was.

Ducks did most of their feeding in cornfields, leaving the refuge areas after shooting hours and returning before shooting was resumed. Consequently there were some disgruntled hunters, who resented seeing all the ducks on evening flights when so fewmoved over the marshes during shooting hours.

A comparison of peak concentrations on the two refuge areas for the past three years is shown in the following table:

	1950	1951	1952
Batchtown Refuge	79,400	49,400	192,000
Calhoun Refuge	150,000	321,000	478,000

Using the same formula which has been used in the past, it is estimated that the total waterfowl use of the Batchtown Refuge amounted to 497,830 birds; while the Calhoun Refuge was used by 729,000. Using the new formula for duck-day use, however, it shows that on Batchtown there were 4,972,128 duck-days use; while on Calhoun Refuge there were 11,611,705 duck-days use. These latter figures are based on data from the new Form MR-1B, which has been put into use for the first time this period.

These figures are shown in the following table:

Area	Total Use	Peak Concentration	Total Duck Days
Batchtown Refuge	497,830	192,000	4,972,128
Calhoun Refuge	729,900	478,000	11,611,705
TOTALS	1,227,730	670,000	16,583,833

b. Geese:

Canada geese started to stay on the refuge on October 2. They remained there all season, and 150 were present on December 16. The peak concentration occurred on November 25, with 300 geese being noted, compared to a peak of 500 in 1951. It is estimated that 55 Canada geese were killed in the vicinity of the refuge this year.

Blue and snow geese showed a decrease this year. They started coming into the area October 7, and peaked at 4,000 on November 30, compared with last year's 12,000 on December 7. About 1,200 of these birds were still present on Calhoun Refuge at the close of this report period. It is estimated that 50 of these birds were killed in the vicinity of the Calhoun Refuge during the past waterfowl season.

c. Swans:

None were observed on either area this period.

d. Egrets:

Egrets were numerous all the season. They stayed about ten days after the season opened, then thinned out in the area. The peak concentration occurred September 13, with an estimated 2,000 birds in the area, compared with about the same last year.

e. Shorebirds:

Wilson snipe showed an increase this year, with an estimated 200 in the area, compared to 150 for the same period in 1951.

There was a decrease noted in killdeer, with 500 present this year, compared to 600 a year ago.

2. Food and Cover:

Favorable water conditions in the Batchtown area led to the production of an enormous quantity of food. All ridges and

margins had good growths of millet, smartweeds, and outgrass, which produced a heavy crop of seed. At the time the ducks moved in much of this was inundated with a few inches of water, making feeding conditions ideal for ducks.

The Gilead Slough area had extremely heavy growths of these species, which grew so dense that it was often impossible to flush the ducks from the beds, and made census work difficult.

In addition to this splendid supply of marginal species, there was also a good supply of submerged aquatics, most of which brought off seed. Hence, food conditions were excellent this fall.

Low water in Pool 26 militated against good aquatic growth this year. While there was a good growth of marginal species, much of the seed thus produced was left high and dry by low water and hence was not available to waterfowl. This did not have an adverse effect on waterfowl usage, however, as ducks took to the surrounding cornfields after shooting hours.

In both pools the presence of machine-picked cornfields alleviated any local shortages of natural foods, and waterfowl fed in these fields in large numbers throughout the season.

B. Upland Game Birds:

No upland game birds are present on either the Batchtown or Calhoun Refuges.

There is ample food and cover present on both areas to sustain fairly high populations of these birds in event any should become established in the areas. Perhaps high water in the spring discourages upland game from using the bottomlands.

C. Big Game Animals:

No big game animals are present on either area.

D. Fur Bearers:
(1) Muskrat:

The muskrat population has not changed very much this year. The usual signs were observed. Not too many trappers are trapping them this year. It is probable that the fluctuations of the pools have kept this species from increasing.

(b) Mink:

Trappers report there are a few more mink this year, but not much trapping pressure on them. Trappers say all they get is raccoon.

(c) Skunk:

No skunk signs have been noted on either area this fall.

(d) Beaver:

Beavers seem to be holding about the same as last year. Almost all islands have beaver signs on them and some new houses were observed. One trapper has reported taking six of them this season.

(e) Otter:

No otter signs have been seen on either area.

(f) Raccoon:

Trappers and coon dog handlers report raccoon are plentiful in all the bottomlands. Trappers report that they can't catch anything else as raccoons get in their traps first. Dog handlers report taking 10 in one night. This species continues to increase in this area.

(g) Foxes:

Foxes are plentiful in all the closed areas and in the entire portion of the river in this vicinity. Trappers are not taking many foxes this fall as there is no bounty and the fur prices are low

E. Predaceous Birds:

Eagles show an increase. This fall 50 of these birds were observed, compared with 27 last year.

Hawks are common in all areas. Red-tailed hawks and marsh hawks are in the majority and appear to be on the increase.

A goodly number of owls have been observed in the timbered areas. These birds are about the same as last year.

F. Fish:

Fish are plentiful in all lakes in the area. The Illinois and Mississippi Rivers have plenty of rough fish as commercial fishermen report a good season. Pole and line fishermen report the best fishing in several years. Swan Lake was the best fishing spot in the area.

III. REFUGE DEVELOPMENT AND MAINTENANCE

B. Plantings:

4. Cultivated Crops:

Ten share-cropping permits were issued, and the results are shown in the table below:

Name	Permit No.	Acres	Crops	Total bu.	Per.	Govt.	part	
Henry C. Weigel	188	20	corn	760	571	189	1.10	207.90
Joe Navarre	189	6	corn	196	147	49	1.30	63.70
August Toppmeyer	190	10	corn	368	276	92	1.43	131.56
John Sherman	191	30	corn	400	200	200		
Robert La Marsh	192	6	corn	236	177	59	1.43	84.37
Harry Bimslager	193	80	corn	530	398	132	1.45	191.40
			beans	105	82	23	2.64	60.72
John Held	194	6	beans	40	30	10	2.76	27.60
W. F. Duncan	195	6	corn	180	120	60		
Ernest Dabbs	196	10	beans	82	61.5	20.5	2.68	54.94
Paul Kobl	197	10	corn	369	280	89	1.40	124.60
						Total revenue		946.79
						Total corn left		360 bu.

VI. PUBLIC RELATIONS

A. Recreational Uses:

Boating and picnicking were extensively done throughout the fall on both the Illinois and Mississippi Rivers. Pecan trees did not bear this fall, cutting down lots of activity on the refuge.

B. Refuge Visitors:

Dr. W. E. Green, biologist for the Upper Mississippi Refuge, spent the first part of November of the waterfowl season here helping to check hunters and secure bag check data.

C. Refuge Participation:

The Refuge Manager attended an all-day Tri-State Meeting of State and Federal wardens on October 6, 1952.

D. Hunting:

Duck hunting in the Batchtown area this fall showed improvement, especially as regards the shooting opportunities. In 1951 extremely low water rendered most of the area unsuitable for hunting, and few hunters were out. In fact, on the State-managed Public Hunting Area, only 45 hunters were out during the entire 1951 season. Normal water this fall led to excellent shooting opportunities, with a large number of hunters participating.

This fall data were obtained from 2,449 hunters, with 3,140 ducks, for a daily average of 1.28 ducks per hunting day. In 1951 a total of 535 hunters were checked, with 926 ducks, for a daily average of 1.73; while in 1950 checks were made on 1,947 hunters, with 2,884 ducks, for a daily average of 1.48 ducks per day. Best results in the pool were obtained in the area hunted by the Batchtown Sportsmen's Club, where the daily average was 2.54 ducks per day. Compared to this, the State-managed area averaged only 0.72 ducks per day; while the Massey Club (near Maple Island) averaged 1.17 ducks per day. Not since the State-managed Public Shooting Area was established have hunters there averaged as high a daily kill as on non-managed areas in the same pool.

A comparison of hunting success in 1951 and 1952 is shown in the following table:

	1951			1952		
Area	Hunters checked	Total ducks	Av. bag	Hunters checked	Total ducks	Av. bag
Massey Club	0	0	0.00	616	725	1.17
State Public Shooting Area	45	15	0.33	1,237	901	0.72
Batchtown Sportsmen's Area	490	911	1.85	596	1,516	2.54
TOTALS	535	926	1.73	2,449	3,140	1.28

It was noted that during the period when Missouri was closed to all hunting as a precaution against fires, shooting dropped off in the Illinois portions of the pool. Birds were

moving into the Missouri portions, where they were not molested. However, when shooting was again resumed in Missouri, hunting improved in the Illinois sections, when the birds were forced back across the line to the closed area.

Duck hunters in Pool 26 had a fair season. The better duck hunters took plenty of ducks, although there were many unsuccessful hunters in the area. High shooting, always a bane to hunters but a preserver of ducks, was the worst this year that it has been for some time. These high shooters kept the birds well out of range and prevented them from decoying in to the better hunters. There were many complaints about high shooting this fall, but oddly enough, no one was checked who admitted it was he who did it--it was always the other fellow. In Pool 26 low water and high shooting were important factors in the lower kill this year.

Excellent weather prevailed throughout the season, but hunters complained that it was too warm. Hunting pressure on the Illinois River was just as heavy as it was last year despite all the complaints.

In Pool 26 a total of 3,372 hunters, with 3,468 ducks, were checked this fall, for an average daily bag of 1.02 ducks per day. In 1951 checks were made on 3,061 hunters, with 4,012 ducks, for an average of 1.31 per day; while in 1950 a total of 1,745 hunters, with 1,693 ducks, were checked, for an average of 0.97 ducks per day.

The Diamond Island Club on the Illinois River fell down this year due to low water and poorer hunting conditions. A total of 453 hunters there took 745 ducks, for an average of 1.64 per day. In 1951 there were 482 hunters on the Club, taking 1,031 ducks, for an average of 2.13 per day; while in 1950 it was found that 184 hunters took 257 ducks, for a daily average of 1.30.

A comparison of hunting success in Pool 26 for the seasons of 1951 and 1952 is shown in the following table:

	1951			1952		
Area	Hunters checked	Total ducks	Av. bag	Hunters checked	Total ducks	Av. bag
Diamond Island	482	1,031	2.13	453	745	1.64
Stump Lake	2,579	2,981	1.15	2,919	2,725	0.93
TOTALS	3,061	4,012	1.31	3,372	3,468	1.02

More bag checks were obtained in the area this year than ever before. While most of the data was obtained by actual field checks, the data from the Batchtown State-managed Area were made available through the courtesy of the men at the Checking Station there, and data from private clubs were supplied from the members who run the clubs. This latter data are believed to be reliable.

This fall data were obtained from 5,821 hunters, with 6,608 ducks, for an over-all daily average of 1.13. In 1950 data were obtained from a total of 3,596 hunters, with 4,938 ducks, for a daily average of 1.37 ducks per day.

E. Fishing:

Pole and line fishing was the best in several years. Large catches of crappies were made up until December. Bass and bluegill fishing was very good.

Commercial fishing was about the same as last year. Carp and buffalo were caught in goodly numbers, but fishermen report that catfish did not run as good as last year.

F. Violations:

One case of hunting without a nonresident license was settled in State Court, and the violator was fined $10.00 and costs of $4.00.

The sanctuaries were respected very well in Pool 26, although a few complaints were received of invasions in the Batchtown area. No apprehensions of those invading the area were made.

Superintendent of Refuges

January 5, 1953.

Regional Director JAN 9 1953

WATERFOWL

Refuge Batchtown Months of September to December, 1952

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose	14	9/23	30	9/30	30	10/8			30
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. Ducks:									
Mallard	80	9/5	100,000	10/14	15,000	12/11			150,000
Black duck	200	10/8	1,000	10/23	80	12/11			2,000
Gadwall	1,000	10/14	1,000	10/14	100	12/4			2,000
Baldpate	4,000	9/30	7,000	10/14	100	12/11			10,000
Pintail	100	9/5	75,000	10/14	25	12/11			100,000
Green-winged teal	200	10/23	300	11/8	100	12/11			500
Blue-winged teal	300	9/5	15,000	10/3	50	11/8			15,000
Cinnamon teal									
Shoveller	400	10/23	400	10/23	100	12/4			600
Wood duck	100	9/5	4,000	10/8	200	11/13			5,000
Redhead	25	10/23	100	11/8	100	12/4			200
Ring-necked duck									
Canvas-back	50	11/13	50	11/13	50	12/11			100
Scaup	400	10/14	2,000	11/26	100	12/11			2,000
Golden-eye	100	11/26	100	11/26	100	12/11			200
Buffle-head									
Ruddy duck	30	10/8	200	10/23	50	12/4			200
IV. Coot:	6	9/9	10,000	10/23	400	11/13			10,000

3-1750
(Sept.1950) Interior - Duplicating Section, Washington, D.C. 82449

Form NR-1

SUMMARIES

4,972,128 duck days use

Dates waterfowl counts made _____

Percent of waterfowl area covered _____

Dates brood counts made _____

Percent of area covered in brood counts _____

Total production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 497220

Peak waterfowl numbers 196000

Areas used by concentrations Batchtown, Gilead, Blackwell areas.

Principal nesting areas this season _____

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.

(2) First seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak concentration: The greatest number of the species present in a limited interval of time.

(4) Last seen: The last refuge record for the species during the season concerned in the reporting period.

(5) Young produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on analysis of the rest of the fo

WATERFOWL

Refuge Calhoun Months of September to December, 1952

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for period
I.	Swans:									
	Whistling swan									
II.	Geese:									
	Canada goose	10	10/2	300	11/25	150	12/10			500
	Cackling goose									
	Brant									
	White-fronted goose									
	Snow goose	25	10/7	2,000	11/30	600	12/10			3,000
	Blue goose	50	10/7	2,000	11/30	600	12/10			3,000
III.	Ducks:									
	Mallard	200	9/2	450,000	12/2	150,000	12/16			650,000
	Black duck	20	10/7	8,000	12/2	200	12/10			10,000
	Gadwall	200	10/16	2,000	12/2	2,000	12/2			2,000
	Baldpate	500	10/2	4,000	12/2	200	12/10			5,000
	Pintail	300	9/2	10,000	10/29	50	12/10			20,000
	Green-winged teal	200	10/22	1,500	10/29	100	12/10			2,000
	Blue-winged teal	2,000	9/2	3,000	9/24	100	11/24			4,000
	Cinnamon teal									
	Shoveller	500	10/16	3,000	12/2	3,000	12/2			3,000
	Wood duck	1,000	9/2	2,000	10/7	50	11/12			3,000
	Redhead	50	10/22	200	11/25	200	12/2			400
	Ring-necked duck	400	10/29	400	10/29	400	10/29			600
	Canvas-back	25	11/12	400	12/2	50	12/10			600
	Scaup	25	10/16	5,000	12/2	200	12/10			10,000
	Golden-eye	100	11/25	200	12/2	100	12/10			400
	Buffle-head	200	11/25	200	11/25	200	11/25			200
	Ruddy duck	25	10/7	100	11/30	100	12/2			200
IV.	Coot:	10	9/2	15,000	10/22	100	11/12			20,000

SUMMARIES

11,621,705 duck days use

Dates waterfowl counts made _____

Percent of waterfowl area covered _____

Dates brood counts made _____

Percent of area covered in brood counts _____

Total production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 729,900

Peak waterfowl numbers 478,000

Areas used by concentrations Swan and Gilbert Lakes

_____

Principal nesting areas this season _____

_____

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.

(2) First seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak concentration: The greatest number of the species present in a limited interval of time.

(4) Last seen: The last refuge record for the species during the season concerned in the reporting period.

(5) Young produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the fo

3-1751
Form NR-1.1
(Nov. 1945)

MIGRATORY BIRDS
(Other than waterfowl)

Refuge Natchitoches Months of September to December 195 2

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Blue heron	80	9/18	100	10/1	10	12/15				200
Egrets	25	9/1	1,000	10/25	20	11/10				2,000
Cormorants	100	9/2	2,000	10/26	15	12/1				5,000
II. Shorebirds, Gulls and Terns:										
Gulls	500	9/10	6,000	12/10	50	12/15				15,000
Killdeer	100	9/5	600	11/1	20	12/10				800
Wilson snipe	30	9/5	100	11/1	10	12/1				150

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Resident all year.				

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

Interior—Duplicating Section, Washington, D. C.

(over)

62362

3-1751
Form NR-1a
(Nov. 1945)

MIGRATORY BIRDS
(Other than waterfowl)

Refuge Calhoun Months of September to December, 1952

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Blue heron	25	9/24	200	10/2	30	12/15				300
Egrets	50	9/1	2,000	9/15	400	11/12				3,000
Cormorant	50	9/1	2,000	10/25	10	12/1				6,000
II. Shorebirds, Gulls and Terns:										
Gulls	200	9/15	5,000	12/8	100	12/15				10,000
Killdeer	200	9/15	500	11/15	20	12/15				1,000
Wilson	100	9/15	200	11/15	10	12/1				300

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow	Resident all year.				

Reported by Edward A. Davis

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

Interior—Duplicating Section, Washington, D. C. 82362

3-1826

WEEKLY WATERFOWL CENSUS

REFUGE Batchtown — MONTHS OF September TO December, 19 52

Species / Common Name	Weeks of Reporting Period 26476																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Swans:																		
Whistling																		
Trumpeter																		
Geese:																		
Canada				14	50	30												
Cackling																		
Brant																		
White-fronted																		
Snow																		
Blue																		
Other																		
Ducks:																		
Mallard	50	500	400	500	6000	75000	100000	22000	2000	4000	11000	5000	21000	10000	15000	40000	5000	
Black						200	500	1000	300	400	200	100	100	300	50	300	100	
Gadwall							1000	1000	300	400	300	100	300	100				
Baldpate					4000	6000	7000	5000	500	500	500	300	1000	200	100			
Pintail	100	500	500	500	30000	45000	75000	40000	5000	4000	2500		3500	200	50	100		
Green-winged teal								200	500	300	300	200	200	100	100	100		
Blue-winged teal	500	1000	1000	1000	6000	11000	5000	400	100	50								
Cinnamon teal																		
Shoveller								400	200	300	100	100	100	100				
Wood	100	200	300	500	200	4000	4000	300	100	200	300							
Redhead								25	50	100	50	50	100	100				
Ring-necked																		
Canvas-back											50		50		50	400		
Scaup							400	500	500	700	400	300	2000	200	100	500	100	
Golden-eye													100	50	100	500	100	
Buffle-head								100					50					
Ruddy						50	100	300					50	50				
Other											200	300	300	150	100	200	150	
Coot:		6	100	100	500	800	6000	10000	1000	1000	400							

Reported by Edward A. Davis

Interior - Duplicating Section, Washington, D. C.

Form NR-1B

3-1826

WEEKLY WATERFOWL CENSUS

REFUGE Calhoun MONTHS OF September TO December, 1952

Species / Common Name	Weeks of Reporting Period 76476																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Swans:																		
Whistling																		
Trumpeter																		
Geese:																		
Canada					10	150	150	500	100	200	150	250	500	100	200	200	150	
Cackling																		
Brant																		
White-fronted																		
Snow						25	100	1000	500	700	800	1000	1500	1500	2000	2000	600	
Blue						50	100	1000	500	800	1000	1500	1500	1500	2000	2000	600	
Other																		
Ducks:																		
Mallard	200	200	500	200	1000	5000	6000	10000	50000	25000	20000	5000	20000	50000	60000	40000	1000	
Black						20	50	100	200	200	500	300	4000	6000	7000	5000	200	
Gadwall							200	300	300	200	100	200	500	1000	2000	2000		
Baldpate					500	800	1000	1000	500	400	100	150	1000	2000	3000	4000	200	
Pintail	500		500	500	5000	6000	400	1500	10000	5000	1000	500	3000	500	1000	500	50	
Green-winged teal								200	1500	400	400	200	400	500	500	500	100	
Blue-winged teal	2000	3000	3000	3000	3000	3000	500	200	100	100								
Cinnamon teal																		
Shoveller							500	300	200	300	200	100	500	1000	2000	3000		
Wood	1000	1000	500	500	2000	2000	500	100	50	200	50							
Redhead								50		100	100	100	200	100	200	200		
Ring-necked									400									
Canvas-back											25		200	75	500	400	50	
Scaup							25	300	800	1100	800	400	5000	3000	4000	5000	500	
Golden-eye														50	100	200	100	
Buffle-head												200						
Ruddy						25	50	100						25	100	100		
Other											100	100	500	400	500	500	200	
Coot:	10	20	50	50	500	500	1000	15000	5000	1000	100							

Reported by Edward A. Davis

Interior - Duplicating Section, Washington, D. C.

Form NR-1B

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge **Calhoun and Batchtown** Months of **September** to **December**, 19/52

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
	Nothing to report under this.									

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

Form NR-3
(June 1945)

BIG GAME

Refuge Calhoun and Batchtown Calendar Year 1952

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
	Nothing to report under this.													

Remarks:

Reported by _____

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1755
Form [illegible]-5
(April 1946)

DISEASE

Refuge Calhoun and Batchtown Year 1942

Botulism

Lead Poisoning or other Disease

Period of outbreak.....

Period of heaviest losses.....

Losses:

	Actual Count	Estimated
(a) Waterfowl	.....	.....
(b) Shorebirds	.....	.....
(c) Other	.....	.....

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	.....	.....
(b) Shorebirds	.....	.....
(c) Other	.....	.....

Areas affected (location and approximate acreage).....

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Conditions of vegetation and invertebrate life.....

Remarks..... Nothing under this to report.

Kind of disease.....

Species affected.....

Number Affected Species	Actual Count	Estimated
.....	.....	.....
.....	.....	.....
.....	.....	.....

Number Recovered.....

Number lost.....

Source of infection.....

Water conditions.....

Food conditions.....

Remarks..... Nothing to report under this.

Form NE 31 1617

Refuge Calhoun and Hatchtown Year 194[illegible]52

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
	Nothing to report under this.							

REMARKS:

For R-7

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Calhoun and Ratcliffe Year 19[illegible]

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
Nothing to report under this.								

TOTAL ACREAGE PLANTED:

Marsh and aquatic_____
Hedgerows, cover patches_____
Food strips, food patches_____
Forest plantings_____

1618

3-1758
Form NR-8
(April 1940)

CULTIVATED CROPS

Refuge Calhoun and Batchtown Year 1942

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Location	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
							Harvested		Unharvested		
					Acres	Bu. Harvested	Acres	Bu.	Acres	Bu.	
Henry C. Weigel	188	80 acres	corn	38		571		185-2/11			
Joe Navarre	189	6 acres	corn	32		147		49			
August Toppmeyer	190	10 acres	corn	36		276		92			
John Sherman	191	30 acres	corn	30		400				200	
Robert La Marsh	192	6 acres	corn	39		177		59			
Harry Binsleger	193	30 acres	corn-beans	11½		707		155		100	
John Kold	194	6 acres	beans -	5		30		10			
W. F. Duncan	195	6 acres	corn	30		120				60	
Ernest Dabbs	196	10 acres	beans	5		61½		30½			
Paul Kobl - Green	197	10 acres	corn	36.9		260		89			

Summary of Crops Grown:	Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
			Acres	Bushels	Harvested Acres	Harvested Bu.	Unharvested Acres	Unharvested Bu.	
	Beans and corn	186		2749.5		662-2/11		590	$ 946.79

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or Location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

3-175
Form N
(April 1946)

COLLEC ONS AND CE TS OF PLANTING S K
(Seeds, root cks, trees, shrubs)

Refuge Calhoun and Batchtown Year 19

Species	Collections				Receipts		Total Amounts on Hand	Amcunt Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
Nothing to report under this.								

3-1760
Form NR-10
(April [illegible]6)

HAYING AND GRAZING

Refuge....Calhoun and Batchtown....Year 19[illegible]52.

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From – To	Rate	Total Income	Remarks
Nothing to report under this.									

Totals:

Acreage grazed..... Animal use months..... Total income Grazing.....

Acreage cut for hay..... Tons of hay cut..... Total income Haying.....

3-1761
Form NR-[redacted]

TIMBER REMOVAL

Refuge Calhoun and Patchtown Year 19[redacted]52

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
				Nothing to report under this.				

Total acreage cut over.....

No. of units removed B. F.....
Cords.....
Ties.....
.....

Total income.....

Method of slash disposal.....